

Aerosolizable Networked Microelectronics for Signals Intercept and Target Tracking

16 August 2025

Simon Edwards

Research Acceleration Initiative

Introduction

A class of microelectronics sufficiently miniaturized in order to be rendered as an aerosol may be used in order to facilitate the covert introduction of sensors/trackers to the interior of radial tires.

Abstract

A cluster of microelectronic sensors with signals intercept and/or GPS functionality may be introduced covertly through admixture with pressurized air and introduced to the interior of a radial tire in order to facilitate the monitoring of the position and activities of a target. This approach has as its advantage that it is highly unlikely to be discovered absent specialized bug sweeping checks and this surveillance regime may be implemented in as little as eight seconds.

This cloud of particles would, within a range of a few feet, be able to communicate with the other particles in order to perform processing functions. Some particles would be dedicated to timekeeping and others to signals intercept. All would be capable of some degree of processing and data storage functionality. Some would be dedicated to transmission of GPS pings and some would be dedicated to receiving return signals. Data exfiltration concerning signals intercept must be pulse-based and routed through cellular devices nearby.

The natural rotation of a tire and the friction of the dust-like microelectronic nodes would provide a power source, as would ambient electromagnetism.

Conclusion

An added benefit would be that because tires are periodically replaced, the victim of such surveillance would naturally participate in the destruction of the evidence of the surveillance mechanism. When it is desired that the surveillance system be uninstalled on short-notice, this could be achieved either by permanently inactivating the circuits using a series of killswitches or by paying a teenager to slash the affected tire.